Optical Components for Analog RF Transmissions

Analog RF Laser and Photo Diodes

Features

- Comprehensive product range of Optical Lasers and Photodiodes with bandwidth of up to 4GHz.
- High output power with wide dynamic range over temperature performance. C-temp and I-temp versions.
- CWDM and DWDM including I-temp versions.
- AOI delivers vertically integrated products. AOI designs and manufactures lasers at our fab facility in Houston, Texas.

Applications

Cable TV, Wireless networks and Satellite transmissions have several common functionalities. First, they typically transport information from one point to many (point to multi-point), second, they all modulate RF carriers to carry information over long distances, third they all face ever growing pressure to increase network capacity to accommodate the day-to-day growth in the amount of information being transported over them. No matter what the transport medium of these networks are, RF signals (both analog and digital) are used as the common carrier medium.

The demand for bandwidth increase is driven by the growth of available information. Coax has finally reached its bandwidth limits as a transport medium for long distances. Even for short distances of over 100 meters (300ft), with RF carriers over 2GHz, Fiber Optic RF transport solutions are becoming even more popular today and rapidly becoming the norm de-facto and preferred broadband distribution technology.

At the heart of every broadband RF over Fiber system is the optical laser (transmitter) and the photo detector (receiver). There are many types of lasers and photodiodes, each suitable for specific applications. Typically these optical components are classified by their optical power, RF bandwidth and their linearity.

About AOI

AOI designs, develops, and manufactures advanced optical semiconductor devices, and packaged optical components. These products are used in fiber optic communications equipment for FTTX (Fiber-to-the-premises, curb, business, and home), point-to-point telecom, datacom, access networks, wireless communication systems, cable television (CATV), direct broadcast satellite (DTH/DBS) and wireless network infrastructure.

AOI is a vertically integrated company with a state-of-the-art semiconductor component fab at our USA Headquarters near Houston, TX. AOI’s global presence, with facilities in Taiwan and China, provides its customers with a high degree of manufacturing integration, delivering high quality superior performance.

Butterfly Lasers

Standard 1310 nm, 14pin BF forward path lasers with +3 dBm to +15 dBm output power versions.

DWDM O-band BF forward path lasers.

CWDM 1270-1610 nm Return Path up to +10 dBm output power.

QAM Butterfly Lasers

15xx DWDM QAM laser with full coverage of C-band, 100 GHz spacing - standard chirp ~80 MHz/mA to 100 MHz/mA for 16 CH QAM. Low chirp < 50 MHz/mA for Full QAM loading. 15CH, 64 CH, 50 CH loading.

Coaxial Lasers

1310 nm Forward Path lasers, < +8 dBm output power. Standard 1310nm and CWDM 4pin coaxial Return Path lasers with typical -3 dBm over C-temp range. 1310nm and 1550nm available with standard pin-out (AOI Type A), also available with thermistor inside (AOI Type T).

Photodiodes

Analog Photodetector pigtail package and receptacle package up to 3GHz excellent analog performance up to 3-4GHz, IMD2 < -75 dBc, IMD3 < -85 dBc. High responsivity, R > 0.85 A/W @ 1550nm.

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